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(54) [Title of the invention]

Optical Disk Baseboard having Excellent Heat Resistance.

(57) [Summary]

[Topic]

To offer an optical disk baseboard (substrate) having excellent heat resistance, molding processibility, rigidity and dimensional accuracy.

[Method for solution]

The optical disk baseboard (substrate) that has the

characteristic of being formed by containing the resin composite that is formed from polyphenylene ether group resin or polyphenylene ether group resin and styrene group resin.

[Scope of patent claims]

[Scope of patent claims]

[Claim 1]

The optical disk baseboard (substrate) has the characteristics of being formed by containing resin composite that is formed from polyphenylene ether group resin or polyphenylene ether group resin and styrene group resin.

[Claim 2]

The optical disk baseboard (substrate) described above in claim number 1 in which styrene group resin is contained in a quantity within the range from 0 to 50 parts by weight with respect to 100 parts by weight of polyphenylene ether group resin.

[Claim 3]

The optical disk baseboard (substrate) described above in

claim number 1 and 2 in which polyphenylene ether group resin is poly (2, 6 - di methyl phenylene) ether.

[Claim 4]

The optical disk baseboard (substrate) described above in any one of the claim numbers from 1 to 3 in which styrene group resin is polystyrene.

[Claim 5]

The optical disk baseboard (substrate) described above in any one of the claim numbers from 1 to 4 in which polyphenylene ether group resin is the one that is denatured by the compound possessing carbon - carbon double bond.

[Claim 6]

The optical disk baseboard (substrate) described above in claim number 5 in which the compound possessing carbon - carbon double bond is organic carbonic acid compound possessing? , ? - unsaturated double bond.

[Claim 7]

The optical disk baseboard (substrate) described above in

claim number 6 in which the organic carbonic acid compound possessing ? , ? - unsaturated double bond is anhydrous maleic acid (maleic anhydride).

[Claim 8]

The optical disk baseboard (substrate) described above in claim number 6 in which the organic carbonic acid compound possessing ? , ? - unsaturated double bond is fumaric acid.

[Claim 9]

The optical disk baseboard (substrate) described above in any one of the claim numbers from 1 to 8 that has water absorbance of less than 0.12 %, thermal deformation temperature of more than 140^{0}C and moreover, temperature at which weight reduces by 5 %, that is measured by heat quantity measuring device, of more than 400^{0}C.

[A detailed description of the invention]

[0001]

[Technical field to which the invention belongs]

The present invention relates to the optical disk baseboard

(substrate). Particularly, the present invention relates to the optical disk baseboard (substrate) having excellent heat resistance, molding processibility, rigidity and dimensional accuracy.

[0002]

[Techniques of the past]

Information recording of high density, storage and its regeneration can be carried out in the case of optical recording using laser beam due to which its development is being carried out progressively. As regards an example of such type of optical recording, optical disk can be given. Optical disk is basically composed of transparent baseboard and different recording media coated over the same.

[0003]

In most of the cases, colorless transparent synthetic resin is used in the transparent baseboard of the optical disk and as regards the representative resin, polycarbonate (called as PC) or poly methyl methacrylate (called as PMMA) can be

given. These resins apart from being colorless and transparent, have excellent intrinsic properties, however, these do not possess all the requirements to be used as optical material, particularly, as optical disk baseboard and also possess problems that are to be solved. For example, in the case of PC, there exists the problem of birefringence (double refraction) due to its aromatic ring and moreover, it also possesses problem of water absorbing property and water permeating property. On the other hand, in the case of PMMA, there exist problems from the aspect of heat resistance, water absorbing property and tenacity.

[0004]

Thus, these resins are used irrespective of their different intrinsic problems, and actually, the new problems mentioned below get generated in the recording medium coated on the transparent baseboard formed from these resins.

[0005]

On the other hand, development of the recording medium is

being carried out since past in diverging fields corresponding to the field of application of the optical disk. For example, as regards the open pore type that is used for recording and regeneration, called as light - ones and the material used for recording, regeneration, erasing and re-recording, called as erasable type, phase transfer type using crystal transfer phenomenon, opto-magnetic type using opto-magnetic effect etc. are known. Materials used in these recording media is tellurium or its oxide or alloy compound etc., in the case of light - ones and in the case of erasable type, amorphous alloy compounds of rare earth metals and transition metals such as GdFe, TbFe, GdFeCo, TbFeCo etc., inorganic group material are mainly used and the recording medium is generally formed by forming a film on the transparent baseboard by dry type treatment method such as sputtering etc. under high vacuum.

[0006]

However, the moisture absorbing property and water

permeating property of PC and PMMA gives rise to the problem of warp by getting swollen at the time of baseboard itself absorbing moisture. Moreover, it results into corrosion of the recording medium by the permeation of moisture through the baseboard, thereby shortening the lifespan of optical disk.

[0007]

Furthermore, regarding the heat resistance of the resin used in the baseboard, there exist the following problems. Namely, in the optical disks, particularly in the optical disks such as light ones type, erasable type etc., temperature of the recording medium at the time of writing and erasing the recording goes above 200^{0}C. Therefore, even though this heat does not come into direct contact with the disk baseboard, it is anticipated that the temperature of the baseboard becomes fairly high at the time of writing and erasing the recording and if the resin having low heat resistance is used, problems such as deformation of baseboard or deformation of groove

etc. occurs.

[0008]

On the other hand, in the process of production of optical disk, the process of heat treatment is performed in most of the cases with the aim of preventing temporal change in the baseboard or recording medium, however, treatment period is demanded to make short by performing the treatment at the highest possible temperature in order to improve the productivity. From this point of view also, if the heat resistance of the resin is low, then high treatment temperature cannot be employed and productivity cannot be increased.

[0009]

Therefore, PMMA having low heat resistance is totally unsatisfactory to withstand the high temperature in the process of production of optical disk or under the usage conditions and therefore, mainly, PC having higher heat resistance is being studied as the transparent baseboard material since past. However, during the recent years, heat

resistance of PC also has become insufficient accompanying the development of semiconductor laser and increase in the density of information which is a current state of affairs.

[0010]

[Topics the invention solves]

The present invention aims at offering a baseboard used in optical disk baseboard, particularly, in DVD (digital video disk) by obtaining the resin composite having high heat resistance, low moisture absorbing property, along with thermal stability and dimensional stability.

[0011]

[Method to solve the topics]

The authors of the present invention carried out an earnest research in order to achieve the aim mentioned above as a result which they showed that the problem mentioned above can be solved by using the composite of polyphenylene ether as the baseboard material, based on which the present invention was completed.

[0012]

Namely, the present invention relates to (1) ~ (9) given below.

[0013]

(1) The optical disk baseboard (substrate) has the characteristics of being formed by containing resin composite that is formed from polyphenylene ether group resin or polyphenylene ether group resin and styrene group resin.

[0014]

(2) The optical diskbaseboard (substrate) described above in (1) in which styrene group resin is contained in a quantity within the range from 0 to 50 parts by weight with respect to 100 parts by weight of polyphenylene ether group resin.

[0015]

(3) The optical disk baseboard (substrate) described above in (1) and (2) in which polyphenylene ether group resin is poly (2, 6 - di methyl phenylene) ether.

[0016]

(4) The optical disk baseboard (substrate) described above in any one from (1) to (3) in which styrene group resin is polystyrene.

[0017]

(5) The optical disk baseboard (substrate) described above in any one from (1) to (4) in which polyphenylene ether group resin is the one that is denatured by the compound possessing carbon - carbon double bond.

[0018]

(6) The optical disk baseboard (substrate) described above in (5) in which the compound possessing carbon - carbon double bond is organic carbonic acid compound possessing ?, ? - unsaturated double bond.

[0019]

(7) The optical disk baseboard (substrate) described above in (6) in which the organic carbonic acid compound possessing ? , ? - unsaturated double bond is anhydrous maleic acid (maleic anhydride).

[0020]

(8) The optical disk baseboard (substrate) described above in (6) in which the organic carbonic acid compound possessing ? , ? - unsaturated double bond is fumaric acid.

[0021]

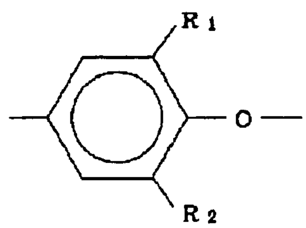
(9) The optical disk baseboard (substrate) described above in any one from (1) to (8) that has water absorbance of less than 0.12 %, thermal deformation temperature of more than 140^{0}C and moreover, temperature at which the weight reduces by 5 %, that is measured by heat quantity measuring device, of more than 400^{0}C.

[0022]

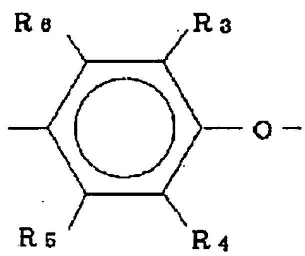
As regards the polyphenylene ether group resin being used in the present invention, the independent polymer or copolymer formed from the constructing units shown by the general formula [a] as well as / or [b] , containing these as repetitive units, can be used.

[0023]

[Formula 1]



[a]



[b]

[0024]

(Wherein, R_1, R_2, R_3, R_4, R_5 and R_6 are univalent residual radicals such as alkyl radical having carbon atoms from 1 to 4, aryl radical, halogen, hydrogen etc. and R_5 and R_6 cannot be hydrogen at the same time.)

[0025]

As regards the representative examples of independent polymer of polyphenylene ether group resin, homo polymer such as poly (2, 6 - di methyl - 1, 4 - phenylene) ether, poly (2 - methyl - 6 - ethyl - 1, 4 - phenylene) ether, poly (2,

6 - di ethyl - 1, 4 - phenylene) ether, poly (2 - ethyl - 6 - n - propyl - 1, 4 - phenylene) ether, poly (2, 6 - di - n - propyl - 1, 4 - phenylene) ether, poly (2 - methyl - 6 - n - butyl - 1, 4 - phenylene) ether, poly (2 - ethyl - 6 - iso propyl - 1, 4 - phenylene) ether, poly (2 - methyl - 6 - chloro ethyl - 1, 4 - phenylene) ether, poly (2 - methyl - 6 - hydroxy ethyl - 1, 4 - phenylene) ether, poly (2 - methyl - 6 - chloro ethyl - 1, 4 - phenylene) ether etc. can be given.

[0026]

The polyphenylene ether copolymer includes polyphenylene ether copolymer containing polyphenylene ether structure as its main constituent such as copolymer of 2, 6 - di methyl phenol and 2, 3, 6 - tri methyl phenol or copolymer with o - cresol or copolymer of 2, 3, 6 - tri methyl phenol and o - cresol etc.

[0027]

Moreover, polyphenylene ether group resin of the present invention can include different other polyphenylene ether

units that are suggested to be present in the polyphenylene ether resin of the past, as the partial structure, as long as the gist of the present invention is not changed. As regards the resin that is suggested to be co-present in a small quantity, 2 - (di alkyl amino methyl) - 6 - methyl phenylene ether unit or 2 - (N - alkyl - N - phenyl amino methyl) - 6 - methyl phenylene ether unit etc. described in Patent number Sho 63 - 12698 and Patent number Sho 63 - 301222, can be given.

[0028]

Moreover, the material bonded to di phenoxynone etc. in a small quantity is also contained in the main chain of polyphenylene ether resin.

[0029]

Furthermore, polyphenylene ether denatured by the compound possessing carbon - carbon double bond, described in Patent number Hei 2 - 276823, Patent number Sho 63 - 108059 and Patent number Sho 59 - 59724 etc. is also included. Furthermore, the resin that is denatured in the extrusion machine by feeding

the compound possessing carbon - carbon double bond at the time of feeding of polyphenylene ether is also included.

[0030]

As regards the compound possessing carbon - carbon double bond, compound used as polymerizable unsaturated compound can be used. Among these also, organic carbonic acid compound possessing ? , ? - unsaturated double bond is desired, for example, maleic acid, fumaric acid etc. can be given.

[0031]

The intrinsic viscosity of the polyphenylene ether group resin present in the composite of the present invention is measured by the following method. First, a part that is 10 g of pellet is dissolved in 200 g of chloroform and filler is removed by filtration after which the filtrate is dried and then, it is dissolved in 150 ml of cold methylene chloride and after this, it is kept undisturbed at - 5^{0}C for 24 hours and the deposited material is filtered. After this, it is washed with methylene chloride and then, it is dried under

reduced pressure at 140^{0}C for 1 hour and polymer is obtained. After this, intrinsic viscosity is measured in chloroform solution at 25^{0}C using Ubelhode viscometer.

[0032]

Weight average molecular weight of the polyphenylene ether group resin of the present invention is desired to be within the range from 40000 to 100000. In the case of it being less than 40000, properties such as anti chemical characteristic etc. get lowered and in the case of it being more than 100000, flowability gets lowered.

[0033]

There is no particular restriction over the manufacturing method of polyphenylene ether group resin being used in the present invention. For example, it can be manufactured by the method described in American Patent number 4,788,277 (patent Sho 62 - 77570), in which 2, 6 - xylenol is subjected to oxidation coupling polymerization under the presence of di butyl amine.

[0034]

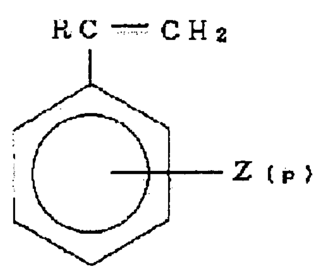
The styrene group resin being used in the present invention is the polymer obtained by polymerizing styrene group compound and the compound that is copolymerizable with styrene group compound, under the presence or absence of rubber polymer.

[0035]

The styrene group compound means the compound shown by the general formula given below.

[0036]

[Formula 2]



[0037]

(Wherein, R shows hydrogen, lower grade alkyl or halogen, Z is chosen from vinyl, hydrogen, halogen and lower grade alkyl and p is an integer from 0 to 5.)

[0038]

As regards the concrete examples of the same, styrene, ? - methyl styrene, 2, 4 - di methyl styrene, mono chloro styrene, p - methyl styrene, p - tert - butyl styrene, ethyl styrene etc. can be given. Moreover, as regards the compound that is copolymerizable with styrene group compound, methacrylic acid esters such as methyl methacrylate, ethyl methacrylate etc.; unsaturated nitrile compounds such as acrylonitrile, methacrylonitrile etc.; acid anhydrides such as anhydrous maleic acid (maleic anhydride) etc. can be given and it can be used with styrene group compound. Moreover, as regards the rubber polymer that can be made to be co-present at the time of polymerization, conjugated diene group rubber, copolymer of conjugated diene and aromatic vinyl compound, the material formed by subjecting a part these to hydrogen addition or ethylene - propylene copolymer group rubber etc. can be given.

[0039]

There is no restriction over the manufacturing method of

styrene group resin of the present invention and the well-known methods such as lump state polymerization, solution polymerization, emulsification polymerization, suspension polymerization etc. can be used and it also includes syndiotactic polystyrene.

[0040]

Furthermore, other rubber polymers such as styrene - butadiene block copolymer or its hydrogen adduct etc. can be added in the present invention as per requirement, within such a range that transparency is not lost.

[0041]

As regards the hydrogen adduct of styrene - butadiene block copolymer, block copolymer formed from at least 1 unit of styrene group polymer block and at least 1 unit of olefin group elastomer block can be given.

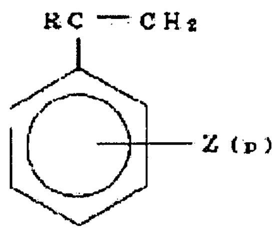
[0042]

As regards the concrete example of styrene group polymer block being stated in the present invention, the polymer or

copolymer block derived from the compound shown by the general formula given below can be given.

[0043]

[Formula 3]



[0044]

(Wherein, R shows hydrogen, lower grade alkyl or halogen, Z is chosen from vinyl, hydrogen, halogen and lower grade alkyl and p is an integer from 0 to 5.)

[0045]

As regards the olefin group elastomer block being stated in the present invention, the polymer block that possesses the state of polymerizing or copolymerizing more than 1 type of olefin compound chosen from mono olefin such as ethylene, propylene, 1 - butene, iso butene etc., conjugated di olefin such as butadiene, isoprene, 1, 3 - pentadiene etc. and

non-conjugated di olefin such as norvolnene derivative etc., having degree of un-saturation of less than 20 %, can be given. Therefore, in the case of using olefin varieties mentioned above as the structural monomer of olefin group elastomer block, the treatment of reducing the degree of un-saturation of the block part mentioned above, upto the extent that it does not exceed 20 %, has to be carried out by hydrogen addition etc. Particularly desired is the hydrogen adduct of styrene - butadiene copolymer having styrene content of more than 50 % and ratio of hydrogen addition of more than 90 %. Moreover, styrene group compound can be randomly copolymerized in the olefin group elastomer block.

[0046]

Other additives such as plasticizer, stabilization agent, ultraviolet rays absorption agent, flame retardation agent, coloration agent, mold-releasing agent (mold lubricant) etc. can be added to the composite of the present invention. As regards the stabilization agent, phosphites, hindado phenols,

alkanol amines, acid amides, di thio carbamine acid metal salts, inorganic sulfides, metal oxides etc. can be independently or jointly used. As regards the ultraviolet rays absorption agent, benzo tri azole variety, salicylate variety, benzo phenone variety etc. can be given.

[0047]

There is no particular restriction over the method of preparation of composite used in the optical disk baseboard of the present invention, however, it is made into pellet form by mixing polyphenylene ether group resin or polyphenylene ether group resin and styrene group resin, as well as other additives used as per requirement, using ribbon blender, Henschel mixer, tumbler mixer etc. and then, carrying out the process of fusion kneading using bombarding mixer, uniaxial extrusion machine, biaxial extrusion machine etc.

[0048]

[State of practicalization of the invention]

The present invention has been explained below in further

details with the help of practical examples and comparative examples. However, the present invention is not restricted only to these practical examples.

[0049]

Moreover, The optical disk properties of the resin composite were evaluated by the test methods given below, by molding a disk baseboard having thickness of 3 mm and diameter of 200 mm, at the cylinder temperature of 300°C (here, 210 °C in case of poly methyl methacrylate) and metallic mold temperature of 80°C (here, 60°C in case of poly methyl methacrylate), using IS100E injection molding machine of Toshiba Kikai (Toshiba Machinery Co. Ltd.).

[0050]

Properties other than these were evaluated by the test methods given below, by molding a test plate at the cylinder temperature of 300°C (here, 210°C in case of poly methyl methacrylate) and metallic mold temperature of 80°C (here, 60°C in case of poly methyl methacrylate), using IS80EPN

injection molding machine of Toshiba Kikai (Toshiba Machinery Co. Ltd.).

[0051]

(1) Warps: The highest warp (mm) was measured using disk baseboard having diameter of 200 mm, using gap (crevice, space) gauge. Lesser the value, more satisfactory is the dimensional accuracy.

[0052]

(2) High temperature warps: Disk baseboard having diameter of 200 mm was heated at 150^{0}C for 10 hours and was then cooled up to room temperature in a room having constant temperature after which condition of surface was visually observed and it was evaluated by the change in the external appearance.

[0053]

O: Almost no change.

X: Large warps generated.

[0054]

(3) Thermal deformation temperature: ASTM - D648

(4) Temperature at which weight reduces by 5 %: Temperature at the time of reducing the weight by 5 %, when using Shimazu (?) Seisakujo (Shimazu (?) Manufacturing Works Ltd.) and increasing the temperature at 40^0C / minute in air.

[0055]

(5) Water absorbance: ASTM - D570 [23^0C, 50 % RH, 24 HR].

[0056]

(6) Flash: Composite pellet was dried in a hot-air type oven at 80^0C for 5 hours after which it was cooled in a room having humidity of 50 % and this condition was regulated and after this, it was retained in an injection molding machine for 30 minutes and disk baseboard having diameter 200 mm was molded and external appearance was observed. The material having bad external appearance had the volatile gas run over the surface of the molded product.

[0057]

O: Normal external appearance

X: Flash observed

[0058]

Practical example 1

10 parts by weight of poly (2, 6 - di methyl - 1, 4 - phenylene) ether having intrinsic viscosity of 0.50 (at 25°C in chloroform) and 0.5 parts by weight of tris (2, 4 - di - t - butyl phenyl) phosphite, taken as stabilization agent were extruded using Ikegai Seisakujo (Ikegai Manufacturing Works Ltd.) make, PCM30, at the cylinder temperature of 320°C at the number of rotations of 300 rpm and composite pellet was obtained. Results of evaluation have been presented in table 1. Temperature at which weight reduces by 5 % of the pellet was 450°C.

[0059]

Practical example 2

10 parts by weight of poly (2, 6 - di methyl - 1, 4 - phenylene)

ether having intrinsic viscosity of 0.50 (at 25^{0}C in chloroform), 25 parts by weight of GP polystyrene (Asahi Kasei Kogyo Kabushiki Kaisha (Asahi Synthetic Chemical Industries Ltd.) make, weight average molecular weight 25000) and 0.5 parts by weight of tris (2, 4 - di - t - butyl phenyl) phosphite, taken as stabilization agent were extruded using Ikegai Seisakujo (Ikegai Manufacturing Works Ltd.) make, PCM30, at the cylinder temperature of 320^{0}C at the number of rotations of 300 rpm and composite pellet was obtained. Results of evaluation have been presented in table 1. Temperature at which weight reduces by 5 % of the pellet was 425^{0}C.

[0060]

Practical example 3

10 parts by weight of poly (2, 6 - di methyl - 1, 4 - phenylene) ether having intrinsic viscosity of 0.50 (at 25^{0}C in chloroform), 50 parts by weight of GP polystyrene (Asahi Kasei Kogyo Kabushiki Kaisha (Asahi Synthetic Chemical Industries Ltd.) make, weight average molecular weight 25000) and 0.5

parts by weight of tris (2, 4 - di - t - butyl phenyl) phosphite, taken as stabilization agent were extruded using Ikegai Seisakujo (Ikegai Manufacturing Works Ltd.) make, PCM30, at the cylinder temperature of 320°C at the number of rotations of 300 rpm and composite pellet was obtained. Results of evaluation have been presented in table 1. Temperature at which weight reduces by 5 % of the pellet was 405°C.

[0061]

Practical example 4

10 parts by weight of poly (2, 6 - di methyl - 1, 4 - phenylene) ether having intrinsic viscosity of 0.50 (at 25°C in chloroform), 0.5 parts by weight of tris (2, 4 - di - t - butyl phenyl) phosphite, taken as stabilization agent, 2 parts by weight of maleic anhydride and 1 parts by weight of di cumyl peroxide were extruded using Ikegai Seisakujo (Ikegai Manufacturing Works Ltd.) make, PCM30, at the cylinder temperature of 320°C at the number of rotations of 300 rpm and composite pellet was obtained. The structure originating

in the reaction between maleic anhydride and poly (2, 6 - di methyl - 1, 4 - phenylene) ether was confirmed by Furie (?) estimating type infrared absorption spectrum. Results of evaluation have been presented in table 1. Temperature at which weight reduces by 5 % of the pellet was 450^{0}C.

[0062]

Practical example 5

10 parts by weight of poly (2, 6 - di methyl - 1, 4 - phenylene) ether having intrinsic viscosity of 0.50 (at 25^{0}C in chloroform), 0.5 parts by weight of tris (2, 4 - di - t - butyl phenyl) phosphite, taken as stabilization agent, 2 parts by weight of fumaric acid and 1 parts by weight of di cumyl peroxide were extruded using Ikegai Seisakujo (Ikegai Manufacturing Works Ltd.) make, PCM30, at the cylinder temperature of 320^{0}C at the number of rotations of 300 rpm and composite pellet was obtained. The structure originating in the reaction between fumaric acid and poly (2, 6 - di methyl - 1, 4 - phenylene) ether was confirmed by Furie (?) estimating

type infrared absorption spectrum. Results of evaluation have been presented in table 1. Temperature at which weight reduces by 5 % of the pellet was 450^{0}C.

[0063]

Comparative example 1

100 parts by weight of polycarbonate (number-average molecular weight 2000) obtained by the common phosgene method using bis phenol A and 0.5 parts by weight of tris (2, 4 - di - t - butyl phenyl) phosphite, taken as stabilization agent were extruded using Ikegai Seisakujo (Ikegai Manufacturing Works Ltd.) make, PCM30, at the cylinder temperature of 280^{0}C at the number of rotations of 300 rpm and composite pellet was obtained. Results of evaluation of the composite pellet have been presented in table 1.

[0064]

Comparative example 2

100 parts by weight of poly methyl methacrylate resin having intrinsic viscosity of 0.35 (at 25^{0}C in chloroform) and 0.5

parts by weight of tris (2, 4 - di - t - butyl phenyl) phosphite, taken as stabilization agent were extruded using Ikegai Seisakujo (Ikegai Manufacturing Works Ltd.) make, PCM30, at the cylinder temperature of 220^{0}C at the number of rotations of 300 rpm and composite pellet was obtained. Results of evaluation of the composite pellet have been presented in table 1.

[0065]

[Table 1]

Item	Unit	Practical example 1	Practical example 2	Practical example 3	Practical example 4
Warps	Mm	< 0.1	< 0.1	< 0.1	< 0.1
High temperature warps		O	O	O	O
Thermal deformation temperature	^{0}C	188	170	154	188
Water	%	0.06	0.07	0.07	0.06

absorbance					
Flash		O	O	O	O

Table 1 continued

Item	Unit	Practical example 5	Comparative example 1	Comparative example 2
Warps	Mm	< 0.1	< 0.1	< 0.1
High temperature warps		O	X	X
Thermal deformation temperature	^0C	185	133	89
Water absorbance	%	0.06	0.15	0.3
Flash		O	X	X

[0066]

[Result / effect of the invention]

High heat resistance, low moisture absorbing property, thermal stability and dimensional stability could be achieved by obtaining optical disk baseboard having the characteristic of being formed by containing the resin composite that is

formed from polyphenylene ether group resin or polyphenylene ether group resin and styrene group resin.